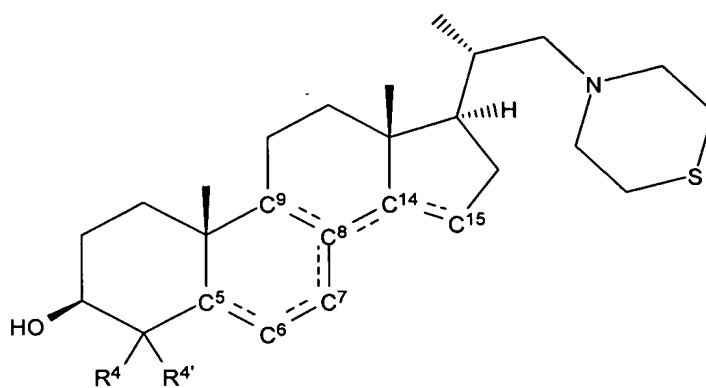
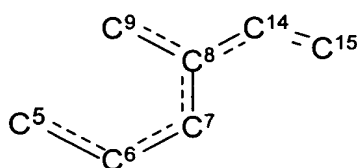


5 Claims:

1. A thiomorpholino steroid compound of general formula **I****I**

wherein in the moiety **I'** of compound **I**

**I'**

each bond between between C⁵ and C⁶, between C⁶ and C⁷,
between C⁷ and C⁸, between C⁸ and C⁹, between C⁸ and C¹⁴ and
between C¹⁴ and C¹⁵, independently, is a single bond or a double
bond, at least one of these bonds being a double bond, with the
proviso that there is no double bond in the steroid skeleton

exclusively between C⁵ and C⁶, and

wherein

R⁴ and R^{4'} independently, are selected from the group, comprising
hydrogen and methyl.

5

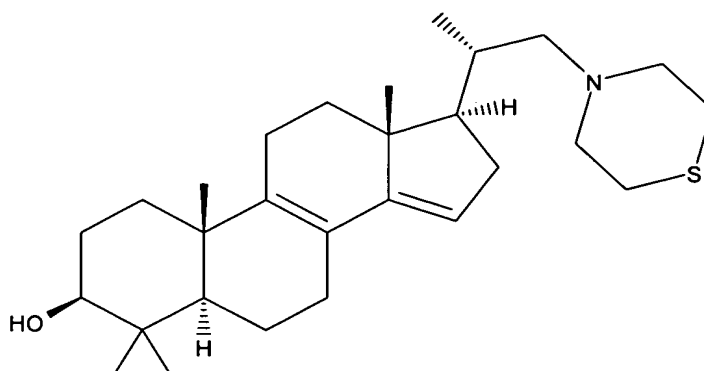
2. The steroid compound according to claim 1, wherein in the moiety with
general formula **I'** one double bond is present between C⁸ and C¹⁴ or
two double bonds are present between C⁸ and C⁹ and between C¹⁴ and
C¹⁵ or two double bonds are present between C⁵ and C⁶ and between C⁷
and C⁸.

10

3. The steroid compound according to any one of claims 1 and 2, being
selected from the group comprising:

15

(20S)-20-[(thiomorpholin-4-yl)methyl]-4,4-dimethyl-5 α -pregna-8,14-
dien-3 β -ol:

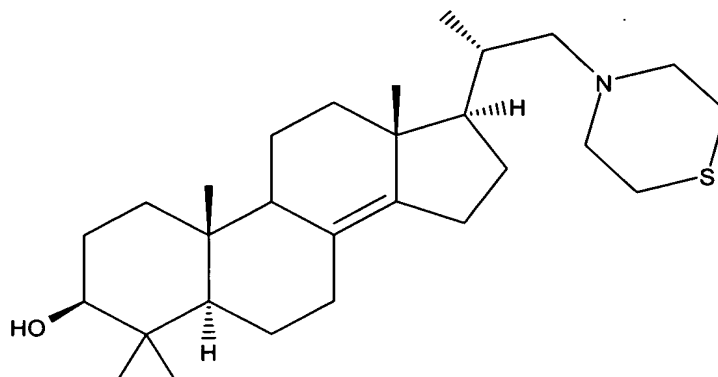


IA

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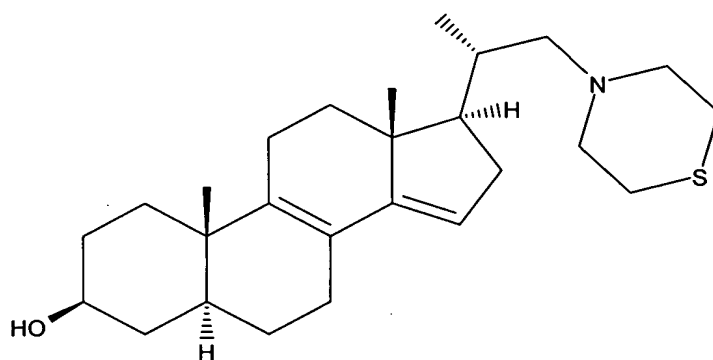
(20S)-20-[(thiomorpholin-4-yl)methyl]-4,4-dimethyl-5 α -pregna-8(14)-en-3 β -ol:



IB

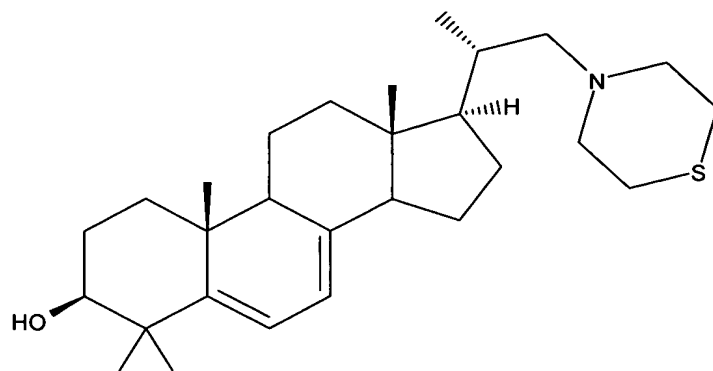
5

(20S)-20-[(thiomorpholin-4-yl)methyl]-5 α -pregna-8,14-dien-3 β -ol:



IC

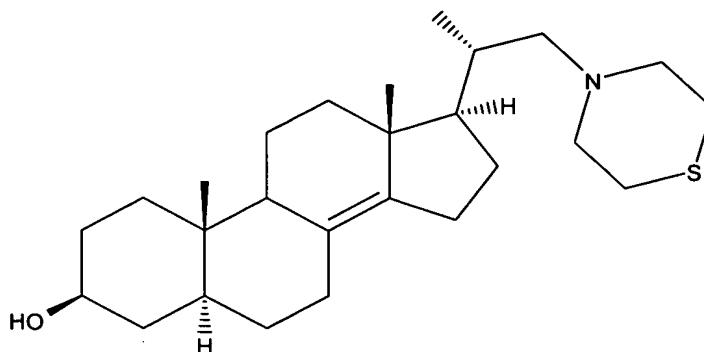
(20S)-20-[(thiomorpholin-4-yl)methyl]-4,4-dimethyl-pregna-5,7-dien-3 β -ol



ID

10

(20S)-20-[(thiomorpholin-4-yl)methyl]-5 α -pregna-8(14)-en-3 β -ol:



IE.

- 5 4. A pharmaceutical composition comprising at least one thiomorpholino steroid compound of general formula **I** according to any one of claims 1 - 3 and at least one pharmaceutically acceptable excipient.
- 10 5. The pharmaceutical composition according to claim 4, wherein the steroid compound of general formula **I** is comprised in an effective amount.
- 15 6. A use of the thiomorpholino steroid compound of general formula **I** according to any one of claims 1 - 3 to the preparation of a pharmaceutical composition being useful to regulate reproduction, especially meiosis.
- 20 7. The use according to claim 6 for non-*in vivo* use.
- 25 8. A use of the thiomorpholino steroid compound of general formula **I** according to any one of claims 1 - 3 to the preparation of a contraceptive or of a profrertility drug.

9. A method of regulating reproduction, especially meiosis, comprising administering to a subject in need of such a regulation an effective amount of at least one thiomorpholino steroid compound of general formula **I** according to any one of claims 1 - 3.
- 5
10. A method for improving the possibility of an oocyte's ability to develop into a mammal, comprising contacting an oocyte removed from the mammal with the thiomorpholino steroid compound according to any one of claims 1 - 3.
- 10
11. A method for the preparation of (20S)-20-[(thiomorpholin-4-yl)methyl]-4,4-dimethyl-5 α -pregna-8,14-dien-3 β -ol, comprising
- 15
- a) starting from (20S)-20-hydroxymethyl-pregna-4-en-3-one;
 - b) introducing two alkyl groups in C⁴ by alkylation;
 - c) reducing the keto group to a hydroxy group;
 - d) protecting the resulting hydroxy group with an acyl group;
 - e) introducing a Δ^7 double bond by bromination/dehydrobromination;
 - f) isomerizing the dien $\Delta^{5,7}$ to the dien $\Delta^{8,14}$ by heating in the
- 20
- presence of acid;
 - g) oxidizing the 17-hydroxy group to an aldehyde group;
 - h) reductively aminizing the aldehyde group with thiomorpholine and removing the acyl group by reduction reaction
- 25
12. The method according to claim 11, wherein the acyl group is a benzoate group.